

(b) a photo-activated, epoxy-containing bulk layer having a first and second major surface, said foam core bonded to the second major surface of said bulk layer; and

(c) an epoxy-containing adhesive layer bonded to the first major surface of said bulk layer, wherein upon photo-activation, said bulk layer has a different curing rate than said adhesive layer;

(II) a glass substrate bonded to the bulk layer; and

(III) a second substrate bonded to the adhesive layer, wherein the second substrate is selected from glass, metal, plastic, wood, and ceramic substrates.

30. (New) A construction comprising:

(I) an article for establishing a seal between two substrates, comprising:

(a) a conformable, compressible, melt flow-resistant foam core;
(b) a photo-activated, epoxy-containing bulk layer having a first and second major surface, said foam core bonded to the second major surface of said bulk layer; and

(c) an epoxy-containing adhesive layer bonded to the first major surface of said bulk layer, wherein upon photo-activation, said bulk layer has a different curing rate than said adhesive layer;

(II) a first substrate bonded to the bulk layer; and

(III) a second substrate bonded to the adhesive layer;

wherein the first substrate and the second substrate are each independently selected from glass, metal, plastic, wood, and ceramic substrates.

REMARKS

Claims 11-30 are pending in the present application. By this Amendment, claims are amended. Applicants respectfully request reconsideration of the present claims in view of the foregoing amendment and the following remarks.

I. Formal Matters:

Claim Rejections Under Obviousness-Type Double Patenting

Claims 11-20 are rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-3, 5-10, 12-16, 18-25, 28-32 and 34-42 of U.S. Patent No. 6,284,360 issued to Johnson et al. (hereinafter "Johnson") in view of Japanese Patent

Abstract Publication No. 10195393 to Amano Hirofumi of the Sekisui Chemical Company (hereinafter "Hirofumi"). Applicants respectfully traverse this rejection.

Claims 11-20 of the present claims are directed to an article for establishing a seal between two substrates comprising, *inter alia*, (a) a conformable, compressible, melt flow-resistant foam core; (b) a photo-activated, epoxy-containing bulk layer having a first and second major surface, said foam core bonded to the second major surface of said bulk layer; and (c) an epoxy-containing adhesive layer bonded to the first major surface of said bulk layer, wherein upon photo-activation, said bulk layer has a different curing rate than said adhesive layer.

In contrast, claims 1-3, 5-10, 12-16, 18-25, 28-32 and 34-42 of Johnson are directed to an article comprising (a) a conformable, compressible, melt flow-resistant core layer having first and second major surfaces; (b) a thermosettable sealant layer on the first major surface of the core layer, wherein the thermosettable sealant layer, upon curing, is not aggressively and permanently tacky at room temperature and can not firmly adhere to a wide variety of dissimilar surfaces upon mere contact and more than hand or finger pressure, the sealant has a surface available for contacting a substrate, and wherein the core layer has an ultimate tensile strength no greater than the ultimate tensile strength of the thermosettable sealant layer. The teaching of Johnson does not teach or suggest an article comprising two curable layers, wherein the curable layers have curing rates, which differ from one another. ✓

The teaching of Hirofumi discloses a pressure sensitive adhesive sheet comprising a first layer and a second layer, wherein the first and second layers have different curing rates relative to one another. The teaching of Hirofumi fails to teach or suggest an adhesive article containing a foam core as recited in Applicants' independent claim 11.

Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to modify the articles of Johnson as suggested by the Office Action (i.e., adjusting the cure rate of the outer layers in the article of Johnson). The only motivation for modifying the disclosed articles of has been deemed from a review of Applicants' invention, not from what is being taught or suggested in the teaching of Johnson or the teaching of Hirofumi. However, in order to expedite prosecution of the present application, Applicants submit herewith a terminal disclaimer, disclaiming any portion of the patent term of the present application that would extent beyond the patent term of Johnson. ✓

II. Prior Art Rejections

Claim Rejections Under 35 U.S.C. §103(a)

Claims 11-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Johnson in view of Hirofumi. This rejection is moot given the submission of the terminal disclaimer submitted herewith.

III. New Claims 21-30:

New claims 21-30 recite additional features of Applicants' claimed invention. Support for new claims 21-30 may be found at page 5, lines 21-24 (claim 21); page 7, line 26 to page 8, line 3 (claim 22); page 6, lines 20-27 (claims 23-24); page 12, lines 9-12 (claim 25); page 14, lines 9-13 (claim 26) page 14, lines 31-32 (claim 27); page 15, line 6 (claim 28); page 17, lines 15-29 (claims 29-30).

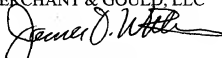
IV. Conclusion:

For at least the reasons given above, Applicants submit that claims 11-30 are in condition for allowance. Accordingly, Applicants respectfully request allowance of these claims.

No additional fees are believed due; however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 13-2725.

Should the Examiner believe that anything further is necessary to place the application in better condition for allowance, the Examiner is respectfully requested to contact Applicants' representative at the telephone number listed below.

Respectfully submitted,
MERCHANT & GOULD, LLC


By: James D. Withers
Reg. No. 40,376

MERCHANT & GOULD, LLC
3200 IDS Center
80 South 80th Street
Minneapolis, Minnesota 55402-2215
404/954-5038
Attorney No. 07780.0820US01
3M Docket No.: 54680US008



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

George et al.

Serial No.: 09/713,382

Filed: November 15, 2000

For: MULTI-LAYERED SEALANT

Art Unit: 1771

Examiner: Chang, V.

3M Docket No.: 54680US008

MARKED UP VERSIONS OF SPECIFICATION PARAGRAPHS AND CLAIMS
ACCOMPANYING APPLICANTS' JULY 03, 2002 AMENDMENT AND
RESPONSE

Applicants provide the following marked up versions of the specification and claims, which were amended in Applicants' July 03, 2002 Amendment and Response filed in response to the April 03, 2002 Office Action. In the amendments below, [brackets] are used to show where terms were removed from the specification or claims, while underlines are used to show where terms were added to the specification or claims.

In The Specification:

The following amendments were made to the specification:

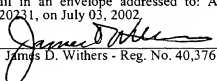
The following paragraph was inserted at page 1, line 4:

This is a divisional of U.S. Patent Application Serial No. 09/409,520 filed September 30, 1999, now U.S. Patent No. 6,316,099, which is a continuation of Application No. PCT/US99/07195 filed March 31, 1999, both of which are herein incorporated by reference.

In the paragraph on page 1, lines 6-11:

[This is a continuation of Application No. PCT/US99/07195 filed March 31, 1999, herein incorporated by reference.] The present invention relates to an article for

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20531, on July 03, 2002.


James D. Withers - Reg. No. 40,376

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establishing a seal between two substrates, more particularly to such an article having a plurality of layers, and even more particularly to such an article having a plurality of sealant layers with an outer adhesive layer having a different curing rate than the remaining layers.

In the paragraph on page 9, lines 10-27:

The epoxy-containing monomer or resin is preferably blended with one or more thermoplastic materials such as, for example, polyesters, vinyl acetates, ethyl vinyl acetates, polyacrylates, and polycaprolactones. An example of a useful blend is an epoxy-polyester blends described in U.S. patent application entitled "Melt-Flowable Materials and Method of Sealing Surface," filed April 12, 1995 and bearing serial number 08/421,055, incorporated by reference herein. These compositions are melt-flowable (and thus thermoformable) in the uncured state. They feature an epoxy-containing material blended with a semi-crystalline polyester resin. The epoxy-containing material contributes to the ultimate strength and heat resistance of the composition, while the polyester component provides conformability and pliability. The utilization of epoxy-containing based materials with polyester blends is also disclosed in U.S. patent application entitled "Sealant Compositions, Article Including Same, and Method of Using Same" filed on September 30, 1997 and bearing serial number 08/941,430, now U.S. Patent No. 6,284,360, incorporated by reference herein. An example of ethyl vinyl acetates includes those disclosed in U.S. patent application entitled "Epoxy/Thermoplastic Photocurable Adhesive Compositions" filed May 1, 1998 and bearing serial number 09/070,971, now U.S. Patent No. 6,057,382, incorporated by reference herein.

In the paragraph on page 12, lines 9-14:

In certain cases, it may be advantageous to add an accelerator to the composition. An accelerator added to one or both of the adhesive layers and the bulk layer can affect the curing rate and thereby achieve the desirable results of the present invention. Dihydroxy aromatics, such as those disclosed in U.S. Patent Application Serial No. 09/224,421 filed December 31, 1998, [and bearing Serial No. 09/224,421] now U.S. Patent No. 6,133,335, herein incorporated by reference in its entirety, are suitable for use in the present invention.

In the paragraph on page 17, lines 1-3:

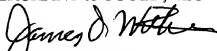
The optional core layer can also be prepared in many ways, depending on its composition. Methods suitable for use with the invention are disclosed in U.S. Patent Application Serial No. 08/941,430, now U.S. Patent No. 6,284,360, previously incorporated by reference.

In The Claims:

Original claims 11-20 were not amended.

New claims 21-30 were added as shown in the Amendment and Response.

Respectfully submitted,
MERCHANT & GOULD, LLC


By James D. Withers
Reg. No. 40,376

MERCHANT & GOULD, LLC
3200 IDS Center
80 South 80th Street
Minneapolis, Minnesota 55402-2215
404/954-5038

Attorney No.: 07780.0820US01
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